Info-Hams Digest   Wed, 8 Dec 93   Volume 93 : Issue 1435

Today's Topics:
                    ARRL's callsign admin position
                    How to Calibrate an SWR meter

We trust that readers are intelligent enough to realize that all text
herein consists of personal comments and does not represent the official
policies or positions of any party. Your mileage may vary. So there.

Date: Mon, 06 Dec 93 09:14:56 EST
From: usc!cs.utexas.edu!uwm.edu!caen!malgudi.oar.net!wariat.org!mystis!
dan@network.ucsd.edu
Subject: ARRL's callsign admin position
To: info-hams@ucsd.edu

jmaynard@nyx10.cs.du.edu (Jay Maynard) writes:

> In article <gregCHMBrt.Err@netcom.com>, Greg Bullough <greg@netcom.com> wrote
> >As far as I can tell, the ARRL's position is that they are the one and only
> >voice of Amateur Radio in the US,
>
> They _are_ the only organization for _all_ hams. I may not agree with them al
> the time, but there simply is no alternative.

The do NOT represent "_all_" hams. They do not pepresent me at this time
and there are MANY hams that I know who are not memebers of the ARRL.
Although, as I have previously stated, I feel that the ARRL is doing a
pretty good job of late, I tend to agree with Greg in that the ARRL
seems to feel that they are the 'one true voice of all amateur radio'.
They are NOT. They may represent a good portion, maybe a majority, but

in NO way do they represent ALL Amateurs!

As I said, I have been impressed of late and am considering sending the
ARRL a dues check. However there are may organizations that represent a
good number of amateurs (W5YI as an example). Now, the other
organizations have not been around as long as the ARRL and are just
getting started. However they are growing. The age of the ARRL being the
exclusive national ham organization is long past.

>
> > 1) The League's history of opposing any petition which does not
> > come through them, as a matter of routine (a.k.a. 'not invented
> > here' syndrome')
>
> Bosh. They have supported many petitions they did not originate; one example
> that springs immediately to mind is the one about restricting responsibility
> for retransmitted communications, which was originated by a couple of hams
> here in Texas, K5FOG and N5GAR.
>
> > 2) Having been told by League officers and staffers that if I
> > left the ARRL, I was giving up all of my representation in
> > Washington (as if I don't vote in Federal elections?).
>
> ...but your representation as a voter is not necessarily the same, or even
> close to the same, as your representation as a ham via ARRL. ARRL has the onl
> ham radio lobbyist in Washington.

If my congressman called the FCC it would make an impact. And believe
you, me, MY congressman is willing to listen to those of us who sent
him to DC.

>
> > 3) Having watched, over the years, the ARRL's vigorous
> > opposition to anyone or anything which presumed to encroach
> > on 'its' territory. Particularly unfortunate, IMO, have been
> > some of the underhanded efforts to silence anyone who would
> > either compete for a role or present an opposing opinion.
>
> Such as? (Wayne Green is an oft-cited example, but if he's the best you can
> come up with, you simply don't have a case: he's consistently predicted doom
> and gloom, and been consistently wrong. He's no more than the Howard Stern of
> ham magazines.)

W5YI and all the other groups that have proposed to take over the
'vanity licensing' proposal. Wayne Green bashing is a usefull as ARRL
bashing (less in fact, Wayne Green isn't claiming to be the 'one true
voice of amateurs').

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>
> >In the ARRL's defense, I think that much of this has been in the honest
> >belief that it is necessary to present the FCC bureaucracy with a united
> >front. The latter is probably sensible, where possible.
>
> More than just sensible: essential.

Since when has our (amateur community) relationship with the FCC become
totally adversarial?

>
> > However, the
> >League, in its zeal to do the best thing for the hobby, has all too
> >often forgotten that this is a pluralistic society.

As I have said, the ARRL is improving. (Can we get rid of incentive
licensing now guys? Like the social programs of the 60's, it isn't in
the national interest.) (There I said it, look out now!)

> As a democratic organization, it is obliged to follow the wishes of the
> majority of its members. If you don't like what it's done, then use the
> mechanisms in place to change it.

One reason I am thinking about joining Jay.

> >It seems to me that the Board of Directors would do well, in presenting
> >position papers to the FCC, to pursue a policy of also bringing forward
> >an occasional 'dissenting opinion,' from within the ranks of amateur
> >radio. In doing so, they would increase their stock by demonstrating that
> >they truly ARE representative of amateur radio as a whole.
>
> No; this would destroy their credibility totally. It would present the League
> as being uncontrollably wishy-washy.

No. Just honest and truly representive of its members.


  ----------------------------------------------------------------------
  | Dan Pickersgill  N8PKV     |  'Pots have handles, Magazines have  |
  | dan@mystis.wariat.org      |      Personals, Hams have Names'     |
  ----------------------------------------------------------------------
  |          Crime in America is a thing of the PAST!!!               |
  |                  The Brady Bill is Law.                           |
  ----------------------------------------------------------------------


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Date: Tue, 7 Dec 1993 14:41:53 GMT
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From: usc!howland.reston.ans.net!paladin.american.edu!darwin.sura.net!
fconvx.ncifcrf.gov!fcs260c!mack@network.ucsd.edu
Subject: How to Calibrate an SWR meter
To: info-hams@ucsd.edu

In article <1993Dec7.113436.4194@bradford.ac.uk> K.E.Walton@bradford.ac.uk (KE
WALTON) writes:
>

>With the output open and TX full (being carefull not to blow my rig up)
>the reflected power should equal the output power.

DONT DO THIS. The whole point of having an SWR meter in the line is to make
sure that the transmitter always sees a good load. You will blow up your TX.
If you want to check the SWR meter in the reverse direction, connectect it
in the reverse direction and you should get the same reading with the swtich
now in the reverse position.

REF must mean REFlected power, so otherwise you seem to have it straight.

Joe NA3T
mack@ncifcrf.gov

Date: 7 Dec 93 23:44:25 GMT
From: ogicse!emory!kd4nc!ke4zv!gary@network.ucsd.edu
To: info-hams@ucsd.edu

References <1993Dec3.223244.1@aurora.alaska.edu>,
<1993Dec5.234801.25658@ke4zv.atl.ga.us>, <1993Dec6.162309.23130@cirrus.com>
Reply-To : gary@ke4zv.atl.ga.us (Gary Coffman)
Subject : Re: hypochondriac scared of cancer!

In article <1993Dec6.162309.23130@cirrus.com> ebs@csparc046.cirrus.com (eric
smith) writes:
>In article <1993Dec5.234801.25658@ke4zv.atl.ga.us>, gary@ke4zv.atl.ga.us (Gary
Coffman) writes:
>|> In article <1993Dec3.223244.1@aurora.alaska.edu> fsjtc@aurora.alaska.edu
writes:
>|> >I live in a dormitory whose window faces the other dorm building. On top of
>|> >_that_ building is a 70 foot radio antennae (I don't know the wattage) that
>|> >broadcasts the college radio station out over the town of Fairbanks, Alaska.
>|> >Yes, people really live there!
>|> >What I want to know is: is having that antennae 100 ft away from my dorm
>|> >room window any kind of health risk? Be honest! I wanna know the facts!
>|> >(it broadcasts at 104.1 fm, if that helps at all.)
>|>

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>|> Well if the station is Class A, 3,000 watts, then the field strength at
>|> the antenna is 387.3 V/m and 0.43 V/m at your window for a power density
>|> of 0.32 mW/cm^2.
>
>Hi Gary,
>
>Could you run through your calculations of power density for me or direct
>me to a reference that has an example of how to do this calculation.
>I have tried to calculate power density based on a toroidal field pattern.
>If I assume no power loss at this distance (bad assumption), I can calculate
>the power density based on the surface area of a toroid 70ft tall (inner radius)
>with a outer radius of 100ft.
>
>  Pd = Pin/(4*pi^2*R*r)
>
>where  Pin=3000Watts R=100ft and r=70ft
>
>When I plug numbers into this eqn, I get about 12uV/cm^2.  This seems to
>be off by more than a order of magnitude.  I know I didn't account for
>antenna directivity, but that's not a factor of 1000.  Where am I going
>wrong?

The formula is wrong.

Ok, I made a couple of simplifying assumptions, and I cheated the
numbers a bit to make it easier to calculate, and then I screwed up. :-(

First I assumed an industry standard Class A transmitter power of 3 kW.
It turns out that's correct for this station. I ignored the 5.44 db gain
antenna used to bring the main lobe signal up to 10.5 kW ERP. Since our
poster is located below the main lobe, this assumption makes the calculation
give a higher value for field strength at his window than actually exists,
and it makes the calculation much easier. Now I cheated by assuming that
the station was on 2 meters instead of 104.1 MHz. That made a halfwave 1
meter. Then I screwed up by assuming field strength falls off with the
inverse *square* of distance, it doesn't, power does. Field strength
falls off linearly with distance. Arrrgh!

Now let's go through it with more accurate numbers. A halfwave at 104.1
is 150/104.1 or 1.44m. Now assuming a free space impedance of 377 ohms
the field strength across 1.44 meters is sqrt(3000*377) or 1063.48 volts per
1.44m at 1.44m. Now let's normalize the voltage across 1m, 1063.48/1.44=738.53
volts/meter at a distance of 1.44m. Now 100 feet is 30.46 meters, so the
field strength decreases by 30.46/1.44=21.15 times. So the volts per meter
at the window is 738.53/21.15=34.92 volts per meter. I missed this by a
mile before. Note I'm not bothering with slant range from the top of the
tower, I'm just taking his 100 feet number for the distance.
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Note that the *tower* is 70 feet tall according to our poster, but
that's not the length of the *antenna*. I'm assuming a single bay
for simplicity of calculation. That's a halfwave dipole. Now the field
strength will be maximum across a sphere with a diameter of a halfwave
that just encompasses the element because there's a 180 degree phase
shift across a halfwave and that gives maximum voltage. That also happened
to be 1 meter in my simplified calculation, but turned into 1.44 meters
in the more accurate calculation. Since field strength falls off with
the inverse of the distance, and since we know the voltage at 1.44 meters,
it's simple to find the voltage at 30.46 meters. Now the power density is
$P=E^2/R$. Since R for free space is 377 ohms, we have $34.92^2/377=3.23$ W/m^2.
Now divide that by 100,000 to get 0.0323 milliwatts/cm^2. I slipped a decimal
there before when calculating a power ratio directly. The power density is
well below the OSHA and ANSI limits.

Gary
--
Gary Coffman KE4ZV | I kill you, | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | You kill me, | uunet!rsiatl!ke4zv!gary
534 Shannon Way | We're the Manson Family | emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244 | -sorry Barney |

End of Info-Hams Digest V93 #1435
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